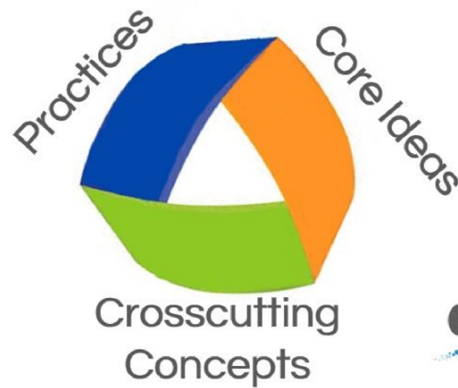


Kindergarten STEM Scopes Pacing Guide 2019 - 2020

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Pushes and Pulls 14 teaching days	Weather Patterns (finish) 4 teaching days	Habitats (finish) 9 teaching days	Animal Needs (finish) 7 teaching days
Speed and Direction 8 teaching days	Weather Hazards 12 teaching days	Organisms' Impact on Environments 14 teaching days	Plant Needs 14 teaching days
Weather Conditions 12 teaching days	Energy from the Sun 12 teaching days	Uses of Natural Resources (begin) 18 teaching days	Reducing Human Impact (begin) 14 teaching days
Weather Patterns (begin) 4 teaching days	Habitats (begin) 8 teaching days	Animal Needs (begin) 7 teaching days	



Scope Title: Animal Needs Quarter 1

Approximate Teaching Dates	(14 days)
Domain(s)	Life Science
Performance Expectations	Students who demonstrate understanding can: K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive..
Science and Engineering Practices	Analyzing and Interpreting Data Use observations (firsthand or from media) to describe patterns and/or relationships in the natural and designed worlds in order to answer scientific questions and solve problems.
Disciplinary Core Ideas	Organization for Matter and Energy Flow in Organisms: All animals need food in order to live and grow. They obtain their food from plants or from other animals.
Cross Cutting Concepts	Patterns Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.
Required Investigations	Explore 1-Picky Eaters Explore 2 - Animal Needs
Required Summative Assessment(s)	Argue- Claim, Evidence, Reasoning (Formative) Open Ended Response Assessment (Formative) Multiple-Choice Assessment (Summative)

*Additional Explain and Elaborate Extension Activities Planned at each Teacher's Discretion

Scope Title: Plant Needs Quarter 1

Approximate Teaching Dates	(14 days)
Domain(s)	Life Science
Performance Expectations	<p>Students who demonstrate understanding can:</p> <p>K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.</p> <p>K-2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>
Science and Engineering Practices	<p>Analyzing and Interpreting Data Use observations (firsthand or from media) to describe patterns and/or relationships in the natural and designed worlds in order to answer scientific questions and solve problems.</p>
Disciplinary Core Ideas	<p>Organization for Matter and Energy Flow in Organisms: Plants need water and light to live and grow.</p>
Cross Cutting Concepts	<p>Patterns Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.</p>
Required Investigations	<p>Explore 1-Water Me Explore 2 - Shine a Light on Me</p>
Required Summative Assessment(s)	<p>Argue- Claim, Evidence, Reasoning (Formative) Open Ended Response Assessment (Formative) Multiple-Choice Assessment (Summative)</p>

*Additional Explain and Elaborate Extension Activities Planned at each Teacher's Discretion

Scope Title: Reducing Human Impact Quarter 1 / 2

Approximate Teaching Dates	(14 days)
Domain(s)	Earth and Space Science
Performance Expectations	<p>Students who demonstrate understanding can:</p> <p>K-ESS2-2 Engaging in Argument from Evidence Construct an argument with evidence to support a claim.</p> <p>K-ESS3-3 Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas.</p> <p>K-2-ETS1-1 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p>
Science and Engineering Practices	<p>Engaging in Argument from Evidence Construct an argument with evidence to support a claim</p> <p>Obtaining, Evaluating, and Communicating Information Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas.</p>
Disciplinary Core Ideas	<p>Human Impacts on Earth Systems Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.</p> <p>Developing Possible Solutions Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.</p>
Cross Cutting Concepts	<p>Cause and Effect Events have causes that generate observable patterns.</p> <p>Systems and System Models Systems in the natural and designed world have parts that will work together.</p>
Required Investigations	<p>Explore 1-Pollution Sort</p> <p>Explore 2 - Engineering Solutions - New Home</p> <p>Explore 3 - Human Impact Memory Game</p>
Required Summative Assessment(s)	<p>Argue- Claim, Evidence, Reasoning (Formative)</p> <p>Open Ended Response Assessment (Formative)</p> <p>Multiple-Choice Assessment (Summative)</p>

*Additional Explain and Elaborate Extension Activities Planned at each Teacher's Discretion

Scope Title: Weather Conditions Quarter 2

Approximate Teaching Dates	(12 days)
Domain(s)	Earth and Space Science
Performance Expectations	Students who demonstrate understanding can: K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time.
Science and Engineering Practices	Analyzing and Interpreting Data Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.
Disciplinary Core Ideas	Weather and Climate Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time.
Cross Cutting Concepts	Patterns Patterns in the natural and human-designed world can be observed, used to describe phenomena, and used as evidence.
Required Investigations	Explore 1-Scientific Investigation - Weather Pattern Chart Explore 2 - Weather Caterpillar
Required Summative Assessment(s)	Argue- Claim, Evidence, Reasoning (Formative) Open Ended Response Assessment (Formative) Multiple-Choice Assessment (Summative)

*Additional Explain and Elaborate Extension Activities Planned at each Teacher's Discretion

Scope Title: Weather Hazards Quarter 2

Approximate Teaching Dates	(12 days)
Domain(s)	Earth and Space Science
Performance Expectations	<p>Students who demonstrate understanding can:</p> <p>K-ESS3-2 Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.* Clarification Statement: Emphasis is on local forms of severe weather.</p> <p>K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>K-2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p>
Science and Engineering Practices	<p>Asking Questions and Defining Problems Ask questions based on observations to find more information about the designed world.</p> <p>Obtaining, Evaluating, and Communicating Information Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world.</p>
Disciplinary Core Ideas	<p>Natural Hazards Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events.</p> <p>Defining and Delimiting an Engineering Problem Asking questions, making observations, and gathering information are helpful in thinking about problems.</p>
Cross Cutting Concepts	<p>Cause and Effect Events have causes that generate observable patterns.</p>
Required Investigations	<p>Explore 1-Getting Ready for the Storm</p> <p>Explore 2 - Engineering Solution - Protect Your Toys</p>
Required Summative Assessment(s)	<p>Argue- Claim, Evidence, Reasoning (Formative)</p> <p>Open Ended Response Assessment (Formative)</p> <p>Multiple-Choice Assessment (Summative)</p>

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Scope Title: Energy from the Sun Quarter 3

Approximate Teaching Dates	(12 days)
Domain(s)	Physical Science
Performance Expectations	<p>Students who demonstrate understanding can:</p> <p>K-PS3-1 Make observations to determine the effect of sunlight on Earth's surface. Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water.</p> <p>K-PS3-2 Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.* Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.</p> <p>K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p>
Science and Engineering Practices	<p>Planning and Carrying Out Investigations Make observations (firsthand or from media) to collect data that can be used to make comparisons.</p> <p>Constructing Explanations and Designing Solutions Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem.</p> <p>Connections to the Nature of Science Scientific investigations use a variety of methods. Scientists use different ways to study the world.</p>
Disciplinary Core Ideas	<p>Conservation of Energy and Energy Transfer Sunlight warms Earth's surface.</p> <p>Defining and Delimiting an Engineering Problem Asking questions, making observations, and gathering information are helpful in thinking about problems.</p>
Cross Cutting Concepts	<p>Cause and Effect Events have causes that generate observable patterns</p>
Required Investigations	<p>Explore 1-Scientific Investigation - Hanging out in the Shade</p> <p>Explore 2 - Sammy the Snake</p> <p>Explore 3 - Engineering Solution - Save the Chocolate</p>
Required Summative Assessment(s)	<p>Argue- Claim, Evidence, Reasoning (Formative)</p> <p>Open Ended Response Assessment (Formative)</p> <p>Multiple-Choice Assessment (Summative)</p>

*Additional Explain and Elaborate Extension Activities Planned at each Teacher's Discretion

Scope Title: Habitats Quarter 3

Approximate Teaching Dates	(17 days)
Domain(s)	Earth and Space Science
Performance Expectations	Students who demonstrate understanding can: K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. Clarification Statement: Examples of relationships include that deer eat buds and leaves and therefore usually live in forested areas, and grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.
Science and Engineering Practices	Developing and Using Models Use a model to represent relationships in the natural world.
Disciplinary Core Ideas	Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do
Cross Cutting Concepts	Systems and System Models Systems in the natural and designed world have parts that will work together.
Required Investigations	Explore 1-Home Sweet Homes Explore 2 - Build my Habitat
Required Summative Assessment(s)	Argue- Claim, Evidence, Reasoning (Formative) Open Ended Response Assessment (Formative) Multiple-Choice Assessment (Summative)

Scope Title: Organisms' Impact on Environments Quarter 3

Approximate Teaching Dates	(14 days)
Domain(s)	Earth and Space Science
Performance Expectations	<p>Students who demonstrate understanding can:</p> <p>K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.</p> <p>K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>K-2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p> <p>K-2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>
Science and Engineering Practices	<p>Engaging in Argument from Evidence Construct an argument with evidence to support a claim.</p>
Disciplinary Core Ideas	<p>Biogeology Plants and animals can change their environment.</p> <p>Human Impacts on Earth Systems Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.</p>
Cross Cutting Concepts	<p>Systems and System Models Systems in the natural and designed world have parts that will work together.</p>
Required Investigations	<p>Explore 1- Things Change Explore 2 - Engineering Solution - Beaver Dam</p>
Required Summative Assessment(s)	<p>Argue- Claim, Evidence, Reasoning (Formative) Open Ended Response Assessment (Formative) Multiple-Choice Assessment (Summative)</p>

Scope Title: Uses of Natural Resources Quarter 3 / 4

Approximate Teaching Dates	(18 days)
Domain(s)	Earth and Space Science
Performance Expectations	Students who demonstrate understanding can: K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. Clarification Statement: Examples of relationships could include that deer eat buds and leaves and therefore, they usually live in forested areas; and grasses need sunlight, so they often grow in meadows. Plants, animals, and their surroundings make up a system.
Science and Engineering Practices	Developing and Using Models Use a model to represent relationships in the natural world.
Disciplinary Core Ideas	Natural Resources Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.
Cross Cutting Concepts	Systems and System Models Systems in the natural and designed world have parts that will work together.
Required Investigations	Explore 1 - Natural Resources Chains Explore 2 - What is it Made of?
Required Summative Assessment(s)	Argue- Claim, Evidence, Reasoning (Formative) Open Ended Response Assessment (Formative) Multiple-Choice Assessment (Summative)

Scope Title: Pushes and Pulls Quarter 4

Approximate Teaching Dates	(14 days)
Domain(s)	Physical Science
Performance Expectations	<p>Students who demonstrate understanding can:</p> <p>K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. Clarification Statement: Examples of pushes or pulls include a person pulling on a string attached to an object, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.</p> <p>K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.* Clarification Statement: Examples of problems requiring a solution include a marble or another object moving a certain distance, following a particular path, and knocking down other objects. Examples of solutions include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.</p>
Science and Engineering Practices	<p>Planning and Carrying Out Investigations With guidance, plan and conduct an investigation in collaboration with peers.</p> <p>Analyzing and Interpreting Data Analyze data from tests of an object or tool to determine if it works as intended.</p>
Disciplinary Core Ideas	<p>Forces and Motion Pushes and pulls can have different strengths and directions.</p>
Cross Cutting Concepts	<p>Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes.</p>
Required Investigations	<p>Explore 1 - Scientific Investigation - Cross the Finish Line</p> <p>Explore 2 - Scientific Investigation - Push! Pull!</p>
Required Summative Assessment(s)	<p>Argue- Claim, Evidence, Reasoning (Formative)</p> <p>Open Ended Response Assessment (Formative)</p> <p>Multiple-Choice Assessment (Summative)</p>

Scope Title: Speed and Direction Quarter 4

Approximate Teaching Dates	(8 days)
Domain(s)	Physical Science
Performance Expectations	<p>Students who demonstrate understanding can:</p> <p>K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. Clarification Statement: Examples of pushes or pulls include a person pulling on a string attached to an object, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.</p> <p>K-PS2-2 Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.* Clarification Statement: Examples of problems requiring a solution include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.</p> <p>K-2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p>
Science and Engineering Practices	<p>Planning and Carrying Out Investigations With guidance, plan and conduct an investigation in collaboration with peers.</p> <p>Analyzing and Interpreting Data Analyze data from tests of an object or tool to determine if it works as intended.</p>
Disciplinary Core Ideas	<p>Forces and Motion Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.</p> <p>Types of Interactions When objects touch or collide, they push on one another and can change motion.</p> <p>Relationship Between Energy and Forces A bigger push or pull makes things speed up or slow down quicker.</p> <p>Defining Engineering Problems A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions.</p>
Cross Cutting Concepts	<p>Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes.</p>
Required Investigations	<p>Explore 1- Inquiry Investigation - Collisions</p> <p>Explore 2 - Engineering Solution - Park the Car</p>
Required Summative Assessment(s)	<p>Argue- Claim, Evidence, Reasoning (Formative)</p> <p>Open Ended Response Assessment (Formative)</p> <p>Multiple-Choice Assessment (Summative)</p>